

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/003424

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ B01J23/656, 35/10, 37/08, C07B61/00, C07C1/04, 11/10, C10L3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ B01J21/00-38/74, C07C1/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2005
Kokai Jitsuyo Shinan Koho	1971-2005	Toroku Jitsuyo Shinan Koho	1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CA (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2003-003174 A (Japan National Oil Corp. et al.), 08 January, 2003 (08.01.03), Claims 1, 2; Par. No. [0001] & EP 1408099 A1 & US 2004/0157938 A1 & WO 02/102932 A1	1-14
Y	JP 2003-512925 A (Exxon Research & Engineering Co.), 08 April, 2003 (08.04.03), Claims 1, 12; Par. Nos. [0001], [0004], [0005]; examples & WO 01/032305 A1 & US 6313062 B1	1-14

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
10 May, 2005 (10.05.05)Date of mailing of the international search report
24 May, 2005 (24.05.05)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	L. FAN et al., Supercritical Phase Fischer-Tropsch Synthesis: Catalyst Pore-Size Effect, AIChE Journal, 1992, Vol.38, No.10, pages 1639 to 1648, full text	1-7
Y	JP 2003-024786 A (Nippon Oil Corp.), 28 January, 2003 (28.01.03), Claims 1, 2 (Family: none)	1-7
P, A	JP 2004-196874 A (Japan National Oil Corp. et al.), 15 July, 2004 (15.07.04), (Family: none)	1-14
A	JP 59-046133 A (Yoshinobu TAKEGAMI et al.), 15 March, 1984 (15.03.84), (Family: none)	1-14

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Claim 1 describes, as a catalyst for producing hydrocarbons which has a carrier containing a manganese oxide and an aluminum oxide and, carried thereon, a ruthenium compound, two catalysts of 1) a catalyst prepared by treating a catalyst with an alkali and then firing the resulting catalyst in air and 2) a catalyst prepared by using an aluminum oxide having a specific pore distribution.

These two catalysts have a common matter of "a catalyst for producing hydrocarbons which has a carrier containing a manganese oxide and an aluminum oxide and, carried thereon, a ruthenium compound", but the search revealed (continued to extra sheet)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet (2)

that said matter is disclosed in the document JP 2003-003174 A Japan National Oil Corp. et al. (and another)), 08 January, 2003 (08.01.03), claim 1, and therefore, is not novel clearly.

As a result, the above common matter falls within the scope of the prior art, and therefore, is not a special technical feature in the meaning of PCT Rule 13.2, the second sentence.

Since there is no other common matter which is considered to be a special technical feature in the meaning of PCT Rule 13.2, the second sentence, the technical relationship in the meaning of PCT Rule 13.2 cannot be found between the above two catalysts.

Accordingly, it is clear that claim 1 does not comply with the requirement of unity of invention.